

VILLAGE BASED SCHOOLS IN MANGOCHI: EVALUATION REPORT

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ABSTRACT

This evaluation of four village based schools in Mangochi district in southern Malawi was designed to assess the effectiveness and sustainability of an innovative community school model run by Save the Children Federation (US). Using a variety of techniques, student tests, parent interviews and focus groups, teacher and head teacher interviews and class room interviews, the schools were compared to government schools in the same geographical area on a number of dimensions, principally student achievement, community and parental involvement, teacher effectiveness and cost. The village based schools were generally rated higher than the government schools on all measures. The reasons for their better performance were judged to be, in order of importance: a curriculum that focused on the core subjects; more regular supervision; smaller class sizes and more participatory instructional strategies.

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Views expressed in this paper are those of the authors and not necessarily those of IPR or AID.

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LIST OF ABBREVIATIONS

AS	Government school, assisted by Save the Children Federation
BRAC	Bangladesh Rural Action Committee
CCAP	Church of Central Africa Presbyterian
DEO	District Education Officer
EFA	Education for All
GS	Government school, not assisted by Save the Children Federation
JC	Junior Certificate
MANEB	Malawi National Examinations Board
MOE	Ministry of Education
MSCE	Malawi Secondary Certificate of Education
ODA	Overseas Development Agency
PEA	Primary Education Advisor
PI	Principal Investigator
PSLC	Primary School Leaving Certificate
RA	Research Assistant
SCF	Save the Children Federation (United States)
SD	Standard Deviation
VBS	Village based school
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development
VDC	Village development committee

Exchange Rate March, 1996: MK14.89 = \$1

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EXECUTIVE SUMMARY

This evaluation compares four Village Based Schools (VBS) in Chilipa Zone, Mangochi District sponsored by Save the Children Federation/US (SCF) with three normal government schools (GS) and three government schools that have received some assistance from SCF (AS). The VBS schools differ from the GS and AS schools in the following ways:

- Community selection of teachers
- Local recruitment of teachers
- Regular supervision by a resident supervisor
- Reduced curriculum, focusing English, Chichewa, mathematics and general studies
- Attending children came from a smaller catchment area than in the government schools, from 1 - 4 villages instead of up to 9 villages
- Regular refresher courses, in addition to induction courses for teachers
- Teachers were mostly primary school graduates

Both the VBS and the AS schools received the following benefits from SCF:

- Textbook and school material supplementation
- Access to SCF's other programmes, like child sponsorship

The principal objectives of the evaluation were to assess the following:

- whether the modified curriculum is boosting the learning achievements of the children in the village based schools in
- the effectiveness of teachers with PSLC qualification in teaching pupils in standards 1 and 2
- the degree and impact of parental and community involvement in the building and running of the schools and in the selection of teachers
- the supervisory and management role played by SCF and the Ministry

The evaluation spent one day at each school. Approximately 30 Standard 2 students were given an achievement test specially developed for the evaluation; their classes were observed and their teachers and headteachers interviewed. In addition, the school committees and village headmen were also interviewed. Supervisory personnel in the Ministry of Education and the SCF were also interviewed. The day after the school visit, a different team

returned to the community to administer a questionnaire to the parents of the children who had been interviewed the previous day.

The major findings were as follows:

- Supervision and Instructional support is better in VBS schools than in either the SCF-assisted or the government schools
- Children in VBS schools performed significantly better in English and Chichewa than children in other schools
- Little difference in community support was observable in the different communities, however the VBS parents had more contact with teachers
- Gender balance was better in VBS schools, with respect to, teachers, and school committees than in the other schools, but no significant difference was observed with respect to pupil enrolment
- Promotion rates appear to be higher, and repetition rates lower in village based schools than in the government schools
- The VBS school committees all exhibited a more active form of supervision of teachers than in the other types of school

The principal reasons for the relatively better performance of the SCF schools were identified as: the emphasis on the core subjects, a better level of supervision, smaller classes and better use of instructional time.

We should emphasize that educational provision in this part of rural Mangochi was generally poor, both in coverage and in quality.

We make the following recommendations for the government:

- A. The government should ensure that PEAs have the necessary transport and support to carry out their training and supervision responsibilities in all schools
- B. The government should permit, **in situations when JC and MSCE holders are not available**, PSLC holders to teach in village schools.
- C. The government should seriously consider expanding the number of village schools, provided that there is training and supervision support
- D. The government should re-examine its current distribution system to assess its effectiveness. It could also approach commercial distributors, e.g. Southern Bottlers, MANEB, etc to assist in the distribution of textbooks and other materials.
- E. The government should more strenuously exploit local recruitment in cases when housing is a problem
- F. Class sizes in lower primary standards should be lowered and urgent help in

class management and multi-grade teaching strategies be given to teachers of these classes

We have the following recommendations for SCF:

- A. SCF should recruit a community worker to help mobilize community participation in the schools
- B. SCF should sponsor another evaluation within two years to assess whether (i) the PSLC teachers remain effective in Standards 3 and 4 (ii) VBS pupils can transfer smoothly into full primary schools (iii) detailed analysis of the gender dynamics within the VBS classrooms
- C. Local builders should be compensated for their full time effort during the construction of classroom blocks
- D. SCF should promote study visits of teachers in neighbouring government schools to SCF village schools to observe the instructional environment

1 INTRODUCTION

1.1 Background

A country's responsibility to provide quality basic education for its children has now been accepted by most countries around the world. This is evident from declarations that have been made in diverse conferences that were, for instance, organized by UNESCO in the 1960's, at the 1990 conference in Jomtien and most recently at the Education for All (EFA) mid-decade review conference in Johannesburg. These conferences were inspired, in part, by a growing body of research evidence that indicates that primary education strongly facilitates national development endeavours (Benavot 1989). There is evidence that primary education improves productivity in the formal and informal sectors both in the rural and urban areas. Further, primary education for girls tends to: reduce fertility rates and improve family nutrition. It also reduces both child and infant mortality rates (Floro & Wolf 1990; King & Hill 1993).

Malawi is a country that is currently making great efforts to increase schooling levels. It is one of a very few countries in the region that has had some success in increasing net enrolments of primary age children in the 1990s (Hyde 1996). Despite this progress, Malawi's primary education system is still besieged by numerous problems. Among the most prominent are: high drop out rates; high pupil:teacher ratios; high repetition rates; inadequate teaching infrastructure; and mediocre teaching methodologies that emphasize rote learning at the expense of fostering understanding of the content being delivered.

1

The educational system of Malawi experienced slow but steady growth since independence in 1963 up until the 1992/3 school year. For the whole of this period primary net enrolment rates, the measure of the percentage of the cohort in school, was never greater than 50 percent for boys, with a narrowing but persistent gender gap in favour of girls. A USAID-funded initiative provided a large infusion of funds into the educational system starting in 1992/3, part of which was used to finance the schooling of non-repeating girls in primary school. The introduction of essentially free primary education for girls led to a jump in the numbers of girls in primary school and a reversal of the gender gap. For the first time in Malawi's history, there were more girls enrolled in primary school than boys.

However, when the present government was elected in 1993, an important plank of its election campaign was an "education for all" pledge. The abolition of fees and uniform requirements opened the doors of primary school to all without restriction to age and was enthusiastically taken advantage of by the citizens of Malawi. By some estimates, the primary school population doubled in 1994/5 school year. The Ministry of Education made valiant efforts to accommodate this expansion; hiring 19,000 new "temporary" teachers and providing them with a two-week induction course; providing for the printing and distribution of additional text and exercise books.

The education system continues to have many problems, most of which have been exacerbated by the dramatic rise in enrolments. Dropout, particularly at the primary level, has risen. The rise in enrolments have been uneven, so that while some areas have been relatively little affected, others have seen standard 1 enrolments double or even treble. The new entrants ranged widely in age, so the standard 1 teachers can be faced with classes of two or three

hundred aged from 6 to 20. The Ministry is still grappling with the problems this poses for instructional methods and materials, not to mention the continued viability of the open door policy.

Malawi maintains an 8-4-4 system with an examination, the PSLE (Primary School leaving examination), at the end of the primary cycle to certify satisfactory completion. In 1993, no more than 11.5 percent of those who passed found places in secondary school.

At the start of primary school Chichewa is the medium of instruction, with English introduced as a subject. Instruction in English starts towards the end of the primary cycle. For the first two years, the school day is 3.5 hours long, generally starting at about 7.30 AM.

Mangochi, a district that lies on the lake shore in the southern region of Malawi, has a large Muslim population and has ranked quite low in access to education for a long period. Female participation is below average for the country. The district is an important centre for tourism in the country, but fishing and agriculture (both subsistence and estate) are also important economic activities.

The part of Mangochi in which the project is located is a hilly area in the centre of Mangochi. It is relatively undeveloped, generally without electricity, telephones or tarmac roads.

1.2 Project History

In 1993 Save the Children Federation/US (SCF) identified Mangochi as a potential site for an educational intervention. Mangochi was one of the districts lagging behind in the provision of primary schooling, with 51 percent of the school going population out of school.

Focus group discussions conducted by SCF in Mangochi revealed many of the problems already cited above. However, particular emphasis was placed on, among other things, the following: poor access to schools because of long distances to school and geographical barriers like rivers; lack of reliable sources of income to finance schooling; irrelevant curriculum from the point of view of both parents and pupils; and also the high opportunity cost of sending children to school.

Given these factors that militated against schooling in Mangochi, SCF decided to introduce the Village Based Schools (VBS) model based on SCF's similar efforts in Mali and the Bangladesh Rural Action Committee (BRAC) project in Bangladesh. These experiences were then integrated with SCF's findings in Mangochi to arrive at a viable model for the Malawi context. Within the district, SCF's efforts focused on Chilipa zone because it was an area in which the issues of long distance and geographical barriers were more pronounced¹.

Given the size of Chilipa zone, criteria for site selection had to be arrived at to identify the four villages that were to be the initial project areas. In choosing these villages the following

¹ SCF has since opened four schools in Malindi, another area of Mangochi.

considerations were paramount:

- a) the distance from a village to the nearest school. Villages whose nearest schools were at least 5 kilometres away were given first consideration.
- b) the existing number of out-of-school children likely to register in the event of a school being erected; and
- c) the willingness of the community to engage in self help work through the provision of their labour for building and maintaining the school structures.

These village based schools differed on a number of key dimensions from existing government schools in the area, namely --

- the teachers were selected by the communities,
- most of the teachers had only a primary school leaving certificate and
- the national primary school curriculum had been modified to focus on the core subjects of Chichewa, mathematics, English and general studies.

In endeavouring to turn their intentions into reality, SCF sought the cooperation of other agencies from the very beginning. The Ministry of Education (MOE) has, for instance, been a consistent and active partner. The Ministry, through the district education officer's (DEO) office, assists in the provision of instructional materials for both pupils and teachers, assists SCF in the training and supervision of the project teachers by providing resource persons; and has also begun to incorporate those teachers with ten years of schooling, i.e. a junior certificate (JC), and higher qualifications into the government's recurrent budget in the second year of the project.

The SCF now oversees eight schools in Chilipa zone, enrolling 1695 children and employing 37 teachers in December, 1995. In addition it provides some support to all government schools in the zone.

At the time the schools were started, and in preparation for SCF's eventual withdrawal, the communities were asked to select a nominal proprietor who would take over responsibility for the schools. In Chilipa, the Catholic Church was nominated, and the Moslem Association of Malawi in Malindi.

The Moslem Association of Malawi has hired an individual to assist in the supervision of the teachers in the Malindi schools. The discussions with the Catholic Diocese of Mangochi have not yet been as successful and SCF still bears most of the responsibility for supervision in Chilipa zone.

1.3 Recruitment procedures²

Pupils - The recruitment of pupils into the VBS schools was guided by the desire to accommodate children who lived too far from existing schools. In essence the VBS were, therefore, geared at providing schooling to its clients for the first three years so that the graduates could join the existing government schools in standard 4. The assumption was that they would then be old enough and strong enough to walk the longer distances to the government schools.

It should be noted that a number of provisos were attached to pupil recruitment:

- 1) the schools were to enrol pupils who were between six and twelve years old only;
- 2) pupils who had spent at least one academic year in any form of school were to be denied entry; and
- 3) class sizes were to be restricted to a maximum of 35 pupils
- 4) pupils were only supposed to come from the village in which the school was located

Subsequently, all the above restrictions appear to have been relaxed. At parents' insistence, children both below and above the age limit were admitted. Anecdotal reports during the focus groups seemed to indicate that some children were withdrawn from schools outside the village to enrol in the village based schools. The class sizes were increased to a maximum of 50 to be more in line with MOE guideline of 1:60. Finally, the communities allowed children from up to four neighbouring villages to attend the schools.

Teachers - The teachers were selected from the community, primarily through the chief and his advisors. When requested to nominate teachers, the criteria were in conformity with Ministry of Education guidelines, i.e. that the individual have at least a JC and be of good character. However, most communities had no such individual living in their village. After discussion with the Ministry of Education, the requirement was lowered to Primary School Leaving Certificate (PSLC)³. The candidates were then asked to sit for an aptitude test and undergo an oral interview in English. This was to ensure that they had the basic competencies required to teach Standards 1 to 3. The successful candidates were then ranked and the community made a final selection from this list. Character, not competence, was the overriding concern for the community. Those chosen to be teachers were then given a two week training course. The training covered the presentation of lessons, maintenance of schemes of work and other records and lesson delivery. Some started teaching immediately and each village school has at least one stand-by teacher who is called on when other teachers are dismissed, go on maternity leave or resign.

² See appendix 1 for a description of government procedures.

³ This is an accommodation that the government frequently makes for teachers who will be hired and paid by NGOs. However, it insists that all government supported teachers must have at least a Junior Certificate.

The VBS teachers are mostly young, between 22 and 35, and have never taught before.

The selected teachers were supposed to stay in the same schools and remain with the same pupil cohort for three years.

1.4 Conditions of employment

All the teachers employed in these schools were paid by the SCF for the first year of their employment. It was envisaged that during the second year, the Ministry would include the teachers on its payroll. To facilitate a smooth handover of salary responsibility, SCF established a fund at the DEO's office to allow the teachers to be paid through the government payroll from the very beginning so that the VBS teachers would get accustomed to the Ministry's payment procedures.

The PSLC teachers with the VBS are all paid at a rate of MK358 per month, agreed at in consultation with the Ministry of Education. The rate for the MSCE teacher is over MK700 a month. The teachers are all encouraged to upgrade their educational qualifications and are given help to study by correspondence for the JC and MSCE. The salaries of those teachers with the higher qualifications are already being paid by the government at government rates in the second year of the schools.

1.5 Curriculum adaptation

During the planning phase, it was decided to focus the curriculum on the core subjects of Chichewa, English, mathematics and general studies. They spend 30 periods a week (15 hours) on instruction in these subjects, while Government schools spend 24 periods, or 12 hours, a week on these four subjects. Other subjects that are part of the official syllabus, i.e. music, physical education, and creative arts are supposed to be incorporated into the teaching of the core subjects in VBS schools. The VBS children are not given explicit religious instruction.

These curriculum decisions appear to have been taken for several reasons. One was to increase the likelihood that the children would acquire literacy and numeracy quickly. It was desired that children be able to transfer easily into the full primary government schools and it was thought this would be more easily accomplished if their literacy were well established. Another reason was that dropout rates in the early standards were high and again it was desired to increase the chances of pupils gaining literacy and numeracy before they dropped out.

In order to respond to the needs of the community, and make use of limited classroom space, a number of additional features were incorporated. For example, all schools run a double shift. The morning shift runs from 8 am to 11.20 am and the afternoon shift from 12 pm or 1 pm to 3.20 pm or 4.20 pm. A mixture of standards come to the morning and afternoon shifts and have a different set of teachers. On Fridays in some schools, afternoon classes start at 1.30 pm to accommodate those children who attend the Mosque.

1.6 Instructional materials

While the VBS schools are included in the distribution of textbooks that come to the DEO's office, SCF has also purchased some textbooks that were in short supply directly from the publisher. In addition, SCF supplies exercise books, chalk, chalk boards, etc both to the village based schools and to all the government schools in the Chilipa zone. Teachers also got additional materials, like charts and pentel pens for making their own charts and classroom illustrations. Each school was supposed to have a trunk for storage of the textbooks and other materials. However, one VBS school which had no doors stored its materials in the school committee chairperson's house which was nearby.

Teachers were encouraged to be innovative in the development of instructional materials. For example, they use resources available in the local environment to make paper substitutes. Dried banana leaves were frequently used for charts and teachers were taught to produce a permanent ink by dissolving coloured chalk in sugar water. Pupils were also encouraged to make individual counters from reeds and string.

Each VBS classroom is supposed to have two centres of learning -- a nature table and a shopping corner. The tables were to be developed jointly by the teacher and pupils. The pupils were encouraged to bring old containers and wrappers for the shopping corner and unusual leaves, stones, maize cobs, etc for the nature table. All classrooms we visited had these centres of learning.

1.7 Monitoring procedures

A supervisor was hired to cover the original four schools and now has responsibility for all the eight SCF schools in the Chilipa area. He uses the small SCF field office in Chilipa village and lives nearby. He fills the role for the VBS that the primary education advisors are supposed to fill for the government schools, i.e. conduct regular supervision visits to each school every three weeks. During these visits he is supposed to inspect lesson plans and schemes of work, observe lessons and meet the headteacher to review records. He is also supposed to discuss problems with individual teachers. Frequently, supervision visits are done in collaboration with PEAs.

Each school has a school committee with elected and/or nominated officers. There was a requirement that women be represented on the committee. As these communities have never had a school before, their school committees were given training in the roles of the different officers and of the schools and asked to produce a plan of action for the development of the school. These committees were also expected to have general oversight of the school, keeping track of absenteeism among pupils and teacher conduct and performance. The village headman is always an ex-officio member of the committee.

1.8 Assistance to Government Schools

As part of the project, SCF also provided assistance to all 19 government primary schools in the Chilipa zone. In collaboration with the Ministry, in-service courses were provided for teachers and headteachers. It also provides or assists in the transport of school materials (chalk, exercise books, textbooks) to the government schools. It provided training for the school

committees in project planning, organization, implementation and evaluation. Practical help like providing fertilizer for school maize plots or seedlings for woodlots was also available. Training was also furnished to PEAs and the SCF supervisor in techniques for supervision and guidance of both para-professional and qualified teachers.

1.9 Village Based Model

In summary, the SCF village based schools have the following features that make them different from other schools in the area:

- Community selection of teachers
- Local recruitment of teachers
- Regular supervision by locally resident supervisor
- A reduced curriculum, emphasizing the subjects of English, Chichewa, mathematics and general studies
- Attending children came from a smaller catchment area, from 1 - 4 villages

The teachers are:

- Mostly primary school graduates
- Given regular refresher courses, in addition to the induction course

Features they share with other schools in the area (also assisted by SCF) include:

- Textbook and school material supplementation
- Access to SCF's other programmes, e.g. child sponsorship

EVALUATION DESIGN

2.1 Rationale

One and a half years after the schools' establishment and in preparation for the eventual SCF withdrawal of support, it was thought necessary to evaluate the effectiveness and sustainability of the schools in their present form. Further, SCF is actively pursuing funding for the establishment of 50 new schools in Mangochi and Machinga, twenty-five of them by April 1997.

In a wider context, the government of Malawi, in partnership with the British development agency, ODA, was developing a nationwide community schools programme as part of its drive to expand schooling. It was considered that the evaluation would also provide important information for this new initiative.

2.2 Objectives

In order to evaluate the impact of schools in the communities, the following were to be assessed:

- the evidence as to **whether the reduced curriculum is boosting the learning achievements of the children in the village based schools** in comparison with children in normal government schools and the SCF assisted government schools
- the **effectiveness of teachers with PSLC qualification in teaching pupils in standards 1 and 2** and what support, if any, is required to maintain or improve this effectiveness
- the **degree of parental and community involvement in the building and running of the schools** and in the selection of teachers and whether this has an impact on dropout rates, on the participation of girls and on teacher accountability and effectiveness.
- the **supervisory and management role played by SCF/US, the Ministry of Education** and other NGOs involved in the village schools

The evaluation was also expected to assess overall progress towards project objectives and the feasibility of replicating the experience. In making the above assessments, the evaluation team was expected to measure impact, indicate which factors/interventions are contributing to or detracting from that impact, and provide recommendations for improving the implementation of the project.

Specifically, the tasks would be to:

1. Compare levels of achievement between pupils in village based schools, SCF-assisted government schools and ordinary government schools in the same area.
2. Assess and compare the instructional competence of teachers in village based schools, SCF-assisted schools and government schools in the same area.

3. Compare the pedagogical and administrative competence of headteachers in the SCF-assisted schools and the village based schools.
4. Assess the nature of the cooperation and collaboration between the school committees, the Ministry of Education at the district level, the communities and other NGOs in the area and the implications for further collaboration.
5. Assess the level of parental satisfaction with the village based schools and their level of involvement as compared to parents from the government schools.
6. Assess the cost per child of the village based schools and compare it with the cost per child in the full government primary school⁴.
7. Assess the relative dropout, attendance and intake rates in the three types of schools, depending on the data available.
8. Assess the relative contribution of household and background characteristics to student achievement

However, the absence of a baseline study and the poor record keeping encountered in schools considerably hampered the evaluation team's ability to make definitive assessments in several areas of interest.

2.3 Evaluation Team

The evaluation exercise took place over five weeks in February and March 1996. The team consisted of Dr. Karin Hyde (consultant and team leader), Ms. Esme Kadzamira and Mr. Mike Chibwana from the Centre for Educational Research and Training, and Mrs. Juliet Sichinga from the Planning Department of the Ministry of Education. For the first two weeks, the team was joined by Dr. Ronald G. Ridker of the Institute for Policy Reform in Washington D.C. With the assistance of the Centre for Social Research, Dr. Ridker developed a household questionnaire that was administered to parents of tested children.

2.4 Description of Samples

2.4.1 School Based Study

Schools: Ten schools in all were visited. The four village based schools that had been in operation for a year and half were all included. Two of the village schools were visited during the morning shift and two during the afternoon shift. Also included were three government schools in the Chilipa zone that had been the recipient of SCF assistance (details in section 1.8). The remaining three schools were selected from the Malindi/Namwera area and the Monkey Bay area. The SCF-assisted and government schools were randomly selected from a list of

⁴ Objectives 6 and 7 were dependent on data availability from the government, SCF and the schools.

schools, jointly compiled by the SCF programme manager and the DEO's office, that were still accessible by four-wheel drive. The damage to roadways caused by the heaviest rains in a decade made this restriction necessary⁵.

Students: An achievement test based on the national primary curriculum in English, mathematics and Chichewa was specially constructed for this exercise. Pre-testing was done in two schools in Zomba district. A sample of approximately 30 Standard 2 students was selected from each school using a systematic random design. Sampling was done independently by gender. The population from which the sample was drawn varied from school to school (see table 8). The breakdown by gender, age and type of school is shown in table 16. The initial plan was to test a small sample of out-of-school children of about the same age to simulate results from a baseline. Unfortunately, we were unable to obtain names of out of school⁶ children and decided instead to test approximately five children in standard 1 from the last seven schools visited.

Teachers: While the focus was on standard 2 teachers, in practice at least one standard 1 teacher was observed and interviewed at each school visited. The teacher was interviewed about current teaching load, experience, qualifications, availability of pupil books and teachers' guides, the development of instructional material and the source and nature of instructional support.

⁵ We believe this procedure positively biased the sample of government schools. We chose from a set of schools that were more established, closer to trading and administrative centres and with better road communication.

⁶ We tried getting the names of out of school children from village headmen and headteachers, but we were either told that there were no children out of school or were provided with names of six and seven year old children.

Subject		Methodology	Sampling
Schools			4 1994 SCF schools, 3 assisted government schools 3 unassisted government schools
Standard 2 pupils	RA	Achievement test	Random sample of 30 based on class lists
Standard 1 pupils in 7 schools	RA	Achievement test	Random sample of five based on class lists
Classrooms	P I	Observation instrument	2 for each teacher to be interviewed in core subjects.
Teachers	PI	Interview	4 teachers per school (including all standard 2 teachers and at least 1 Standard 1 teacher)
Headteachers	PI	Interview	1 per school
Parents	RA	Focus group Interview	2 per school 30 per school
Village headman, ndunas, VDC	PI	open-ended interview	2 per community
DEO/PEA	PI	open-ended interview	1 DEO, 1 individual interview for the PEA responsible for Chilipa zone and a group interview with the other PEAs
SCF supervisor	PI	open-ended interview	1
School committees	PI	open-ended group interview	1 per school
Programme manager	PI	open-ended interview	Several
SCF director	PI	open-ended interview	1

Classrooms: A classroom observation instrument developed by the Population Council for use in an ongoing study⁷ was modified to make it more appropriate for use in Standards 1 and

2. The instrument looked at instructional methods used by the teacher, questioning behaviour and the allocation of time within a 30 minute period. In addition, note was taken of seating arrangements, furniture and instructional materials present in the classroom and the use of texts. This modified instrument was also pre-tested in Zomba district.

Community Leaders: The village headman and/or his ndunas (advisors) were asked about how individuals from his/her community were mobilized to build the school, their current role, if any, with the school, their satisfaction with the school and teachers, and any efforts being made to increase the participation of girls

Parents: The parents were asked to come to the school after the session was over and participate in a focus group discussion covering their contribution to the development of the school, its current operations, their level of satisfaction with the school and the teachers and, for the parents in the village based schools, the possibilities of transferring responsibility for payment of teacher salaries to the local community. A brief questionnaire was also administered to the 242 focus group participants either before or after the discussion when basic demographic data was gathered (see table 5). Two discussions were held in all but one VBS school. It rained very heavily that afternoon and only a few parents turned up.

Headteachers: The headteacher was questioned about links with the Ministry and/or SCF, instructional support, cooperation with parents, the community, the school committee and community leaders as well as constraints to the smooth functioning of the school. When possible, we obtained promotion, repetition and dropout statistics for Standards 1 and 2. We interviewed ten headteachers, including two females, one from a government and one from a VBS school.

School Committees: Members of each school committee, the chair and two members, were asked about the composition of the committees, the training they had received, their current role with respect to the schools and their level of satisfaction with the school and teachers.

The District Education Officer, the Primary Education advisors and the SCF supervisor were also interviewed on their links with, views of and expected future involvement with the village schools.

2.4.2 Household Survey

Parents: On the day following the visit to the school, 234 of the parents of the tested children were interviewed individually at home. This household interview sought to elicit information on parental education, income and resources as well as attitudes towards schooling.

2.5 **Organization**

The two complementary studies, one school based and the other household based, were carried out simultaneously.

⁷ "Schooling and the Experience of Adolescents in Kenya".

Over the period of the study, the school team visited one school a day when the pupils were given an achievement test⁸, teachers and headteachers were interviewed and standard 1 and 2 classrooms were observed. The students to be tested were selected the previous day when one of the principal investigators visited the school. The parents of the tested students were invited to attend a focus group discussion after school on the same day their children were tested. The officers of the school committee and the village headman and his advisors were also interviewed. To get a picture of the administrative and supervisory context in which these schools operated, the district education officer, the primary education advisors, the SCF education supervisor, and the SCF field director were also formally interviewed. A less formal series of conversations was held with the SCF programme manager who was based in Mangochi for additional background and information. The household team followed the next day and interviewed the parents of the tested children from a list prepared by the school team.

Data collection for the school based study was done by a team of 8. The four principal investigators observed classes, interviewed teachers and headteachers and collected school record information. They also interviewed the school committee officers and the village headmen and advisors. Four research assistants carried out the testing of pupils and conducted the focus group sessions.

Data for the household survey was collected by a team of three research assistants supervised by a Research Fellow from the Centre for Social Research.

The interviews for the DEO, PEA, and SCF officers were conducted in English as were the headteacher interviews and some teacher interviews. The rest of the interviews and the testing were conducted in Chichewa, with some of the focus groups being conducted in Yao.

2.6 School Environment

The communities in which these schools were located were all at least thirty minutes from the boma⁹, in rural Mangochi. The government schools were all closer, between thirty minutes and one and a quarter hours away from the boma and none was more than a kilometre away from a tarmac (or formerly tarmacked) road. The closest VBS school was about two hours away and forty five minutes from a tarmac road. Both the AS schools and the GS schools were located in larger, more diverse villages -- that had markets, grocery shops, tailors, restaurants, tea rooms, large churches or mosques and even health centres. VBS villages in general did not have such facilities.

The children in government and SCF-assisted schools were better off -- less likely to be wearing rags and more likely to be wearing shoes, although this was rare.

⁸ The test development exercise was led by Ms. Kadzamira with the assistance of two primary teachers and input from Ron Ridker.

⁹ District administrative centre.

The results of both the school based study (teachers, students, school committee) and the household survey are reported in the subsequent chapters. In general, when the findings come from the household interviews, they are explicitly described as such. Otherwise, it can be assumed that the findings come from the school study.

* * * * *

The following sections deal with our investigation of the implications of the differences in teacher background, support and curriculum for the learning achievement of children, the levels of dropout, repetition and promotion and of community involvement. Most results will be presented in a three way comparison, between the village based schools (VBS), the SCF-assisted schools (AS) and the government schools (GS). A three way comparison was thought to be most useful because of the number of innovative features and additional support introduced in the village schools. The AS schools had benefited from a sub-set of the support services, i.e. provision of exercise books, educational materials, etc, and would therefore be useful for comparison with both the village based and the government schools.

THE ADMINISTRATIVE ENVIRONMENT

3.1 Administrative Backup

All schools in the Mangochi area, including the VBS schools come under the general supervision of the District Education Officer. In practice, this means that

SCHOOL	SCF	PEA	TOTAL
VBS 1	4	2	5
VBS 2	4	2	4
VBS 3	5	3	5
VBS 4	1	1	2
AS 1	2		2
AS 2			0
AS 3			0
GS 1		1	1
GS 2			0
GS 3			0

NB The SCF supervisor and the PEA would sometimes visit schools as a team, consequently the total number of visits is less than the sum of individual visits.

he participates in the planning for the establishment of the schools, approves the final plans and is kept informed of all developments. All practical details of development, maintenance, etc are handled by the staff of the SCF.

The SCF Education Programme Manager lives and works in Mangochi town and is responsible for all twelve VBS schools in Mangochi.

SCF also employs a supervisor in the Chilipa zone who supervises those schools and is assisted by an employee of the Moslem Association of Malawi in the Malindi zone.

Administrative and instructional supervision of the government schools is the responsibility of the Primary Education Advisors or PEAs (formerly known as Inspectors). There are seven of them in Mangochi district and each is responsible for a zone which covers between 19 and 29 schools.

Unfortunately, all the PEAs live in the two largest towns in the district, either in Mangochi town or Monkey Bay, and although they had three working motorbikes three years ago, now they have only one that barely functions. Therefore, their movements are limited currently to walking or public transport. For this and other reasons -- including inadequate supplies of stationery and an unsatisfactory system of allowance payments -- **the PEAs declared themselves unable to fulfill their assigned role of regularly visiting schools and advising teachers.**

On the other hand, the PEAs would accompany the SCF supervisor on visits to the VBS schools when they would utilize the transport provided by SCF.

3.2 Responsiveness

The visitors' books of all schools were inspected for the number of supervisory visits by either SCF or the PEAs for the 1995/96 school year and the results tabulated in table 2.

The village based schools were being visited frequently and the government school were seldom visited. The impact of this could be seen in several dimensions. First, records were poorly kept in most government schools, both SCF - assisted and ordinary government schools. The registers were often incomplete. Required information like age, parent's name or village was often missing and attendance was not marked either systematically or regularly.

The government teachers were seldom, if ever, observed teaching by the PEAs and therefore had little opportunity to discuss problems or teaching strategies with the qualified experts.

The PEAs did visit the government schools for MANEB to deliver examination papers, and occasionally to deliver salaries, and we feel these visits should be used to supervise and guide teachers.

3.3 Summary and Conclusions

The SCF manages the VBS schools with the full cooperation of the Ministry of Education. For a variety of reasons, including the local residence of the supervisor and availability of transport, the SCF staff are able to visit the VBS schools and keep them adequately supplied with materials like stationery, chalk, etc. They can also ensure that textbooks, when available in the district, are supplied to the schools. The government schools, on the other hand, are almost never visited by the primary education advisors.

4 COMMUNITY INVOLVEMENT

4.1 School Committees

The school committees were seen as the major link between the community and the school.

Generally, the school committees consisted of nine community members, and most of them had female members, although all chairpersons were male. **The village based school committees had a higher proportion of female members** than the others. The timing of meetings, once a month or in an emergency, did not differ across types of schools. Nor did the

Indicator	Village Based	SCF-Assisted	Government
% Female	39.5	29.6	25.9
% Received training	100	33.3	0
% Assisted by SCF/MOE	100	33.3	33.3
%Active Supervision of teachers	100	66.7	0

way they interacted with the community. They all expected villagers to contribute to the school by moulding bricks, carrying water or providing other labour. A few school committees encouraged the community to attend their meetings. The incidence of problems with teachers was similar across schools. Two of the VBS school committees and one each of the assisted and government schools reported having to deal with unpunctuality, drunkenness, quarrels and excessive punishment of pupils.

There were some differences. As table 3 indicates, all the VBS committees had received training and were assisted in some way by SCF, for example through the supply of stationery. Most striking is the committees' reported mode of assessment of teachers in their schools: **the VBS school committees all indicated a more active form of supervision**. The two government schools with active committees relied on feedback from pupils, as did the SCF-assisted schools. One SCF-assisted school committee reported that the Chairperson visited the school and another that teachers were watched for unbecoming behaviour in the community. The VBS schools mentioned keeping track of teachers' punctuality and attendance, two reported observing classes, comparing results to those in other schools and checking the pupils' work at home.

The VBS school committees were asked how they planned to deal with an eventual SCF withdrawal. They had plans but no concrete strategies. Two indicated that they would try to get the government to take on the role of the SCF, i.e. assist in construction and the supply of teachers. One group indicated that it would ask SCF to help it find another donor. The fourth

group had plans for developing a garden and getting a loan from SCF to start trading in beans.

4.2 Parental Involvement and Satisfaction

The parents and community leaders in all the villages experienced similar types of involvement in the development of their schools. Whether under direct MOE supervision, the Catholic diocese or the SCF, they reported that their **involvement in the construction of the school was limited** to summoning villagers and organizing their work on the part of the community leaders, or of moulding bricks and fetching water, sand and stones.

Although the communities were supposed to have decided on the reduced curriculum themselves, none of the parents who participated in the focus groups were aware that a choice had been made and the reasons for the choice. So several individuals indicated that they would prefer that subjects like religious education, health education, science or agriculture be added to the curriculum.

Only those parents who were members of the School Committee felt that they had a continuing involvement with the school. There appeared to be little or no resentment of this state of affairs. **Many parents indicated that given their illiteracy and general lack of education they were not competent to have a say in the day to day affairs of the school** in their community.

However, parents did have a definite opinion of their school. Generally, all parents expressed overall satisfaction with the school. In VBS schools, parents were grateful that they at least had a school in their community and that their children were being taught by people they knew in relatively small classes. The short distances and the lack of danger, especially to small children that that involved were cited frequently. **The VBS parents drew comparisons with other schools, indicating that the children who attended the village schools were able to read and write earlier than children who had attended other schools.**

The parents whose children attended government schools also expressed general satisfaction with their school, although one group mentioned that there had been rumours of sexual harassment. The government school parents had on occasion heard of village based schools that their children could have attended but preferred to attend the full primary school as they felt it was a better school by virtue of the fact that it went up to Standard 8. VBS parents appeared to assume that their school could be developed into a standard 8 institution by the successive addition of classroom blocks.

School Type	N	% Non-response	% Female	% No Education
VBS	102	3.8	31.7	57.6
AS	69	16.9	24.6	41.5
GS	63	19.2	30.7	42.6
Total	234	13	29.3	

The household survey asked heads of households who had a choice of schools why they selected the school they did for their child. Overall, 96 percent of parents answering this question said it was because the school was closer to home. However, of the 9 who gave different answers, four parents in VBS and two parents in AS answered that it was because of good teachers, and two others in VBS answered that the facilities were good. No one with children in GS schools gave such positive answers.

School Type	N	% Female	% No Education	% of Daughters Enrolled	% of Sons Enrolled	School Expenditure Last Term
VBS	76	78.9	75	90	97	MK139.2
AS	88	79.5	42	92	96	MK201.2
GS	78	59	46.8	97	97	MK244.6

During the focus groups, most parents reported that they would feel comfortable in approaching a teacher about their child, but few had in fact done so. In all the village schools, this was reported to be the case. In the AS schools, some did not feel comfortable with approaching teachers, either because they resented some actions of teachers, like excessive punishment of their children or using them on teachers' farms. They also felt that the school committee was the proper intermediary.

As table 6 below shows, the evidence related to the question of parent involvement in the school is mixed. It is clear that VBS parents know and have more contact with their children's teachers -- not surprising since the teachers come from the villages in which they teach. The fact that a smaller percent of VBS parents know the functions of the school committee may result from the fact that these schools are less than two years old, so parents have had less time to observe the school committee in action. The percentages for attendance at PTA meetings is disappointingly low amongst all schools. The figure for cash value of school contributions is surprisingly high in the VBS villages considering that these villages appear to be both poor and non-monetized.

The evidence from the teachers' interviews corroborates the data from the focus groups and the household interviews. Ninety-one per cent of VBS teachers had met with parents as compared to 71 percent of the teachers from the other schools. Similarly, the average number of parents seen per week by the VBS teachers was almost 12, and almost 5 for teachers from the two other types of schools. The teachers from VBS schools were more likely than teachers from the other schools to characterise parents as very supportive; (64 percent versus 30 percent in AS and 43 percent in GS schools).

4.3 Mobilization

In all the villages, the traditional mobilizing mechanisms were reported to have been used to build the schools. In other words, the headman or chief had been approached first. He then sponsored a village meeting and requested assistance from clan or family heads to marshal labour from the whole community. These traditional patterns still appeared largely successful, as all ten schools had been built in this way. Three of the village based schools were in the process of putting up additional classroom blocks and most of the other schools had plans to use community labour to erect additional classroom blocks.

However, we consider that these patterns are not adequate to get parents truly involved in school management. Further, it may be necessary to pair literacy education with the development of schools to initiate the process of encouraging parents to be more actively involved in school management.

INDICATOR	VBS	AS	GS
% Heard of Parent Teachers Association (PTA)	8*	19	5
% Attended PTA meeting this academic year	5*	13	0
% Heard of school committee	83*	58	61
% Member of school committee	5	2	2
% Knows what school committee does	44	65	71
% Knows name of at least one school committee member	57	67	63
% Knows name of child's teacher	76*	30	34
% Discussed child's performance	16*	2	0
% Cash value of assistance to school			
Mean	MK378	MK57	MK112
Mean+	MK144	MK57	MK112
Median	MK100	MK20	MK78

* Significant at $\leq .15$

Mean+ is mean with four highest values deleted.

4.4 Summary and Conclusions

All the communities had built their schools through self help and had been mobilized in the conventional way, i.e. through the village headman. The school committees appeared to be functioning in all but one school (a government school), but the VBS school committees played a more active role with respect to the school than the others, particularly with respect to teacher supervision. They were also more likely to have a higher percentage of female members.

Parents' involvement in the school was largely confined to contributing their labour when

the school was being built or extended. It was a role they appeared comfortable with and willing to maintain. However, several groups made the point that the builders, who provided the technical expertise and a more sustained effort, should be paid.

Parents were most likely to come to the school when summoned to explain a child's absence or be asked to deal with naughtiness. Some parents came to the school to request that teachers help them discipline their children.

Parents' general lack of formal education was a barrier to their effective participation in the running of the schools. This was true for all school types. In general, they did not feel competent to approach teachers or to challenge them, except in VBS schools where, of course, teachers were well known to them. They saw the school committee as having that responsibility, but we did not uncover any evidence that the school committees' involvement with parents went any deeper than tapping their labour resources.

We feel that school committees and teachers, in both the village and government schools should be encouraged to raise the complexity of their interaction with parents. While most of these parents may be illiterate, they have knowledge and experience that can be used by the school as well as be built on to help develop the communities. Parent-teacher associations can be initiated or revived as a means of encouraging the school committees to meet regularly with parents for an exchange of concerns and views.

SCF should be encouraged to give its officers a continuing community mobilization role, to introduce different options for interacting with teachers and the village school and helping the parents to overcome the intimidation they feel when faced with schooled individuals.

5 THE INSTRUCTIONAL ENVIRONMENT

5.1 Overview

A central question of the evaluation was whether or not the PSLC teachers were effective, i.e. were they able to transfer to these children just entering school the basic skills of literacy and numeracy that they would need as an essential basis for gaining other knowledge, both within and outside the school system. A key part of that answer can be obtained from the analysis of the achievement test results in section 7. However, we also felt that direct observation of their teaching and an analysis of the teachers' interview responses was an integral component of the answer.

Twenty seven teachers were interviewed, 11 from VBS schools, 9 from AS schools and 7 from GS schools.

5.2 Teacher Qualifications

School	PSLE		JC		MSCE		% F
	M	F	M	F	M	F	
VBS 1	5	1	1				14
VBS 2	1	5	1				71
VBS 3	2	3					60
VBS 4	2	3					60
AS 1			5		5	4	29
AS 2			3		4		0
AS 3			6		1	1	14
GS 1	1		5	8	7		38
GS 2			5	2	2		22
GS 3			3	4	4	1	42

As can be seen from the table above, all but two of the teachers in VBS schools were Standard 8 graduates. One of the VBS teachers had only recently obtained a JC. The PSLC teacher in the government school had over thirty years experience as a teacher. Most of the government teachers (including those from the AS schools) were trained teachers. They were also more experienced: the teachers in the AS schools have taught for an average of 12 years and those in the government schools for an average of 7 years. No VBS teacher had taught for more than 1.5 years. The VBS teachers were also more likely to be female, though there was variance from school to school on this characteristic.

5.3 Learning time and Class Sizes

School	Average Class Size		Total Enrolment	
	Standard 1	Standard 2	Standard 1	Standard 2
VBS 1	41	53	82	159
VBS 2	41	48	123	190
VBS 3	41	64	123	128
VBS 4	58	40	116	119
Mean VBS	45	51	111	149
AS 1	135	107	406	214
AS 2	339	98	339	98
AS 3	479	210	479	210
Mean AS	318	172	408	207
GS 1	125	90	499	361
GS 2	260	230	260	130
GS 3	113	79	225	158
Mean GS	166	133	328	316

Village based schools have smaller classes on average than the other types of schools. Our observations indicated that **the differences between classes of 50 and classes of 150 or more had practical implications for such indicators as time on task or the proportion of the class period spent on instruction** that would help explain the findings in the section on the achievement test results.

Our visits to classes clearly demonstrated how difficult it is for the teacher to retain the attention of pupils in large classes. In a couple of cases, it was hard even for us, from the back of the class room, to hear what the teacher was saying. The students were closely packed together on the bare floor (VBS children sat on mats), so much so that it would be necessary for 20 or 30 children to get up to let us through to the back of the class. In one class, even that was impossible and the observer had to sit in the front of the room. With so many children sitting in close proximity, we witnessed numerous incidents of pushing, pinching, arguing, etc, that suggested that children were not paying attention to the lesson.

In a class containing 100 or more pupils, activities such as checking work or handing out textbooks were protracted events and would often run into the next lesson, thereby reducing

time available for instruction.

Teachers in these large classes used a number of management strategies of dubious effectiveness. Most classes had one or two older boys (in their mid-teens in our estimation) who sat at the back of the class and tried to help keep order, sometimes with a cane, sometimes without. To keep the class amused, the teacher would encourage the class to do a lot of singing, but only some of it was instructional or related to the subject being taught.

This situation was little improved when teachers combined classes, because of lack of classrooms, so that classes now had over 200 children. The extra teacher would then help in keeping order in the classroom and in checking work, but not in actual instruction, so we are dubious as to whether learning was positively impacted by this move.

The differences in class size between the VBS and both types of government schools are likely to have serious implications for the amount of learning that can go on. A recent review of research into the issue of class size and its implications for attainment concludes that the evidence supports a link between class sizes under 20 for children in the early years of schooling (Blatchford & Mortimore 1994). In other words, for the most effective teaching in the early grades, even the VBS classes are too large.

5.4 Instructional Activity

An observation instrument was used for systematic classification of the activities within the classrooms. We observed English, mathematics, Chichewa and general studies in all three types of schools. A major part of the observation was characterizing the kind of instruction that occurred during the course of the lesson. The major objective was to discover whether teachers in the three types of schools differed significantly in their instructional behaviour. Up to four teachers in each school were observed and we tried to observe each teacher twice.

Table 9 indicates how common certain types of instructional activities were. The first observation is that the teachers in the village based schools exhibited a wider variety of behaviours than in the other schools. In both types of government school, some of the activities we looked for never occurred. This is an indication (but not a firm conclusion given the sample sizes) that instructional activity in the VBS schools may be more varied than in the government schools.

The VBS teachers were somewhat more likely to use 'lecture' i.e. talk about and explain a topic, but were also more likely to have the children work together in groups on an assigned task (group work). They were also somewhat more likely to have students copying from the board. These differences reflect our observations that more actual instruction went on in the VBS schools.

ACTIVITY	Percentage of Classes Where Activity Occurred		
	Village Based	SCF-Assisted	Government
Lecture	55	34	33
Teacher Writing on Board	55	54	67
Group Work	25	0	7
Discussion	10	9	0
Student Doing Exercises	45	73	47
Students Copying from Board	15	0	7
Teacher/Student Demonstrating	45	36	53
Group Recitation	50	73	53
Teacher Checking Student Work	50	64	73
Group Response	90	64	80
Teacher Helping Boy	25	45	20
Teacher Helping Girl	25	36	20
N	20	11	15

The data will be re-examined in subsequent sections to see whether the teachers in the VBS schools behave in ways that are significantly different from teachers in the other types of schools.

5.5 Workload

In the VBS schools each teacher is responsible for teaching all subjects to his or her class. While this is generally true in government schools also, in larger schools with more teachers and more streams, there is the tendency to collapse streams of Standard 1 and Standard 2. The teachers of the constituent classes then share teaching responsibilities. As a result there is more variability in the teaching load, with one Standard 1 teacher in one government school only responsible for seven periods a week. The average teaching load ranges from 30 in the VBS schools to 26 in the AS schools. The government school teachers had a mean workload of 28 periods a week.

All the VBS teachers who did not have a JC reported that they were currently studying for one. In addition, they all reported making supplementary teaching materials.

It appears from the statistics in table 8 that **the workload of the VBS teachers is greater than that of teachers in the SCF-assisted or government schools.**

RESPONSIBILITIES	Village Based	SCF Assisted	Government
Average periods per week	30	26	28
% Who develop own teaching materials	100	50	29
% Currently studying	91	40	29

5.6 Instructional Support

Teaching materials were more available in the VBS schools: both printed charts and charts made by teachers from local materials and fixed to the mud brick walls using sticks. The VBS teachers all had the required teachers' guides, unlike the teachers from the AS or the GS schools.

The teachers in the VBS classrooms had their walls covered with a variety of charts and pictures that they referred to frequently during lessons. Because of the smaller classes, children could be directed en masse to the right, left or back walls and read or describe what was on them. The walls in government classrooms were generally bare and so did not offer the government teachers the same opportunities.

INSTRUCTIONAL SUPPORT	Village Based	SCF Assisted	Government
% Have all teachers' guides	100	50	28.6
% Obtained Instructional help from PEA/SCF Supervisor	55	10	0
% Obtained Instructional help from another teacher	9	70	43
% Obtained instructional help from Headteacher	27	20	57

The teachers from VBS schools were more likely to have requested and received help from the SCF supervisor or PEA; five times more likely than their colleagues in the assisted schools. No teacher in the government schools reported using the PEA as an instructional resource.

5.7 Summary and Conclusions

The teachers in the government schools had a higher level of education than those in the village schools, and were on average more experienced. Although the government schools had some untrained teachers, the new temporary teachers, there were not more than two per school. Given the fact that the VBS teachers taught every period every day, were studying for their JC and all made their supplementary teaching materials themselves, they had a heavier workload.

Classes were significantly larger in government schools. Standard 1 was seven times bigger in the assisted schools and four times larger in government schools on average. Standard 2 was three times and two and a half times larger respectively. The large class sizes meant that teachers had less time for instruction in the government schools.

Instructional support was significantly better in VBS schools with teachers having all their teachers' guides and better access to the SCF supervisor. However, there appeared to be few significant differences between the classroom activities of VBS teachers compared to the teachers in the other types of school.

6 PUPIL PARTICIPATION

This section is based entirely on records obtained from the schools, from attendance registers and headteachers' records of their monthly returns. Where we were unable to get information, it was due to unsystematic record keeping -- the headteacher could not find the records from the previous year or to a change of head ship where a handover of records had clearly not been done. One headteacher (a very experienced one from a government school) had prepared much of the information we required as part of a briefing about the school, but several of the rest found our questions about enrolment, dropout, etc., the previous year very stressful. They are clearly not accustomed to providing this type of information. The headteachers clearly do not use this information for self monitoring and evaluation of their school's retention of pupils.

6.1 Absenteeism

While attendance records could not be gathered from all schools, the household survey asked two questions about absenteeism. The first, referring to the current term, indicates no association with school type. However, the second, referring to last term, does indicate some difference, with parents in VBS and AS schools reporting lower absenteeism than those in the GS schools. There does not appear to be any significant differences in the daily time spent in school or the time devoted to reading/drawing and school work at home.

INDICATOR	VBS	AS	GS
% Absent one or more weeks this term	19.6	7.2	20.3
Number of days absent last term Mean	2.0	2.0	2.6
Median	1.0	1.0	2.0
Hours per day spent in school Mean	4.5	4.4	4.5
Median	4.0	4.0	4.5
Hours per day spent on school work outside school Mean	0.16	0.15	0.18
Median	0.15	0.15	0.15

We did not systematically collect information on the causes of absenteeism, but the following reasons were volunteered by teachers and school committees in all types of schools as to the reasons why children did not attend school:

- lack of suitable clothing
- flooding rivers
- lack of protection from heavy rains
- lack of interest in school

6.2 Repetition¹⁰

The data on repetition rates was obtained from the headteacher's records. Adequate information was available from only two schools, one VBS and one assisted school and is detailed in table 13.

VILLAGE BASED			SCF-ASSISTED		
Boys	Girls	Total	Boys	Girls	Total
16	10	13	19	20	19

The repetition rate is somewhat lower in the village based school.

We were not able to collect statistics on the individual characteristics of repeaters in either type of school but the SCF programme manager indicated that

NB. Table based on one VBS and one SCF-assisted school.

a number of the VBS repeaters were from the group that was under-age in the original standard 1.

6.3 Promotion¹¹

We were able to get the information to estimate promotion rates from three of the four VBS schools, two of the assisted schools and one government school. The promotion rate is based on the number who actually take the end of year examination in Standard 1. Therefore, it should be noted that many schools have experienced significant dropout by that stage. The figures are illustrated in the table below.

The VBS schools for which we have data have promotion rates from 67 percent to 85 percent. These rates are better than those for SCF-assisted and government schools, but could be improved. Children of normal intelligence should be able to master the syllabus for standard 1.

School	Village Based			SCF-Assisted			Government		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
I	-	-	-	-	-	-	-	-	-
II	62	71	67	-	-	19	-	-	-
III	87	81	85	50	66	56	81	91	86
IV	89	68	77	NA	NA	NA	NA	NA	NA

¹⁰ Repetition rates were calculated by dividing the number of repeaters in Standard 1 in 1995/96 by the number who sat for the Standard 1 examination in 1994/95 and multiplying by 100.

¹¹ Promotion rates were calculated by dividing the number of pupils who passed the 1994/95 Standard 1 examination by the number that sat for the examination.

6.4 Dropout¹²

The first observation to be made about table 15 is that dropout rates are much lower in the VBS schools for which we have data. These schools appear to be succeeding in retaining a higher proportion of their students. We were told that some dropout was due to transfers to government schools in order to register for free maize, or to accompany parents who were going to estates to earn food or money. It would be advisable for the schools or the school committees to try and keep proper statistics on these phenomena to assess what proportion is leaving school for these reasons.

The second observation is that girls' dropout rates appear to be lower in the VBS schools than in the others. In two of the three schools for which there is information, girls' dropout is lower than boys. In addition, in VBS II, the school with the highest proportion of female teachers, the girls' dropout rate is the lowest.

School	Village Based Schools			SCF-Assisted			Government		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
I	-	-	-	33	47	39	-	-	66
II	8	7	7	-	-	23	-	-	-
III	4	10	7	34	40	36	40	33	37
IV	13	11	12	NA	NA	NA	NA	NA	NA

- No data could be obtained

If we compare the VBS and the AS schools which are located in the same geographic area, and share similar occupational and agricultural patterns, we can see that type of school apparently has a greater impact than home factors or economic conditions. The dropout rate in

¹² Dropout rates were calculated by dividing the number of pupils who dropped out before the Standard 1 examination by the number enrolled at the start of the year - transfers in.

the government schools is at least as high as that in the AS schools. **This information is a strong indicator that school factors are at least as important as home factors in dropout at this level.**

6.5 Summary and conclusions

All measures of pupil participation, repetition, promotion and dropout, were better in VBS schools than in either the AS or the GS schools. The characteristics of the VBS schools offer a reasonable explanation for this:

- schools are smaller and less crowded and by virtue of that fact alone, more pleasant places for children
- classes are smaller
- more instruction is going on and the VBS schools are therefore inherently more interesting to attend
- we observed very little bullying or intimidation in VBS schools unlike in both types of government schools
- VBS schools are closer to children's homes and easier to get to
- higher percentage of female teachers appears to have positively impacted girls' dropout

7 RESULTS OF ACHIEVEMENT TESTS

7.1 Introduction

Of fundamental concern was whether the pupils in the VBS schools were performing at the same level or below that of pupils in the AS and GS schools. To compare the achievement levels of pupils in VBS and AS and GS schools, a test was administered to a sample of standard 1 and 2 pupils in the schools, 45.5 percent of whom were girls.

Three hundred and four students in all were interviewed, 269 of them in Standard 2 and 35 of them in Standard 1. The design called for randomly selecting 30 standard 2 students from each of ten schools; we also selected between four and six standard 1 pupils from seven schools (all the government schools and one VBS school). The test was administered to standard 1 pupils in order to obtain a proxy baseline with which to compare the results.

School Type	Boys N	Girls N	% Female (STD 2)		% of Sample		Age	
			Enrolled#	Sample	Expected	Actual	Mean	SD
VBS	58	48	50.0	45.3	40	36.5	10.6*	1.85
AS	46	37	49.0	44.6	30	32.3	11.5	1.92
GS	42	36	56.7	46.2	30	31.2	10.8*	2.40

* - One VBS and one GS child did not know their age.

- From headteachers' interview

The actual sample selected was as shown in table 10. The sample was selected systematically, so the difference in the percentage female between the enrolment and the actual sample is due to a higher rate of absenteeism among the female pupils. The actual percentage of the sample that came from VBS school was lower than expected. This occurred because the VBS schools were visited first and the research assistants were administering the test more slowly at the beginning.

The ages of the sampled pupils ranged from 6 to 16 years in the VBS schools, 7 to 16 years in the AS schools and 6 to 17 years in the GS schools. Thus, the age distribution in the three school types was similar. The mean age for the VBS schools (10.55 years) was only slightly lower than the other two school types (11.51 and 10.83 years in the AS and GS schools respectively).

The test was in three sections, covering English, mathematics and Chichewa, and the 65 items were based on the national curriculum in languages and mathematics that the children had been exposed to during the one and a half years they had spent in school. The test took between 25 and 40 minutes to administer. The mathematics items covered topics such as counting,

number recognition, addition, subtraction, multiplication, division and money problems set in everyday context. In English and Chichewa the items covered the reading of alphabet letters, simple words and sentences, writing and reading comprehension. The pupils were individually assessed because the literacy levels of pupils at this stage are still very low.

7.2 Mathematics Achievement

The overall performance on the mathematics sub-test was satisfactory for all the three school types. As Table 17 illustrates, the mean score for each school type was above 50 percent. The test also reveal little differences amongst the school types. The VBS schools registered higher mean scores than either AS or the GS schools. However, there were no significant differences in achievement between the three school types.

TYPE OF SCHOOL	MATHEMATICS (%)		
	N	Mean	SD
Village Based	107	69.90	24.72
SCF- Assisted	83	67.38	23.01
Government	79	68.19	25.67

Means not statistically different from each other.

7.3 Language

The VBS schools outperformed AS and GS schools in English and Chichewa. In English, the VBS schools performed significantly better than both the SCF assisted and government schools¹³. The AS schools had a higher mean score in English than government schools, but the difference between the two mean scores was not statistically significant. In Chichewa a similar trend was observed. The VBS schools performed better than AS schools, who did better than GS schools. The AS performed significantly better than the GS schools in Chichewa. The mean Chichewa and English scores of the VBS and AS scores were not, however, statistically different.

¹³ T-test for difference in mean scores significant at .05 level.

Contrast	English	Chichewa
VBS/AS	Significant	Not significant
VBS/GS	Significant	Significant
AS/GS	Not significant	Significant

Significance ≤ 0.05

The overall performance on the English sub-test was less than satisfactory. In all the three school types the majority of the pupils (nearly 70 percent) were able to write down their names and also recognise letters of the alphabet presented to them at random. However, a greater proportion of pupils in the VBS schools got these items correct. On reading and writing tasks, the VBS schools performed better than the AS and GS schools.

Only about one-quarter of the pupils in the SCF assisted and government schools were able to read or write words found in their textbooks. In the VBS schools over a third of the pupils demonstrated the same abilities.

Almost two-thirds of the pupils from AS and GS schools failed to read a simple passage containing three short sentences composed of words found in their textbooks. Only three pupils (slightly under 4 percent) from these two school types were able to read and answer comprehension questions correctly. In comparison, more than half (about 58 percent) of the pupils in the VBS schools could read the passage. Nine pupils (8 percent) were able to read the passage and showed some understanding of what they had read.

In Chichewa the majority of the pupils in the three school types were able to recognise and sound out the five vowels presented to them. There were still some differences between the schools in the proportion of children able to recognise the vowels¹⁴. In the VBS schools 83 percent of the pupils recognised the vowels compared to 65 percent and 70 percent respectively of pupils from the SCF assisted and government schools. In addition, more pupils from the VBS schools (nearly 60 percent of the pupils for each of the reading and writing items) demonstrated the ability to read and write words and sentences. In the AS schools slightly fewer pupils (about 55 percent) were able to do so. In the government schools only about a third of the pupils were able to read and write simple words and sentences.

When we compare the performance of pupils in the three subject areas, we note that, irrespective of school type, the pupils performed significantly better in Mathematics and scored lowest in English and a little higher in Chichewa (see Figure 1 for the distribution of the scores). The results clearly show that most of the pupils had problems in reading and writing. This was particularly pronounced in the AS and government schools. A significant proportion of the pupils in these schools failed to read the alphabet and faced even more difficulties in reading simple words taken from their textbooks. Some could not even write their own names. The pupils from village schools did better than the rest on the reading and writing tasks.

¹⁴ Recognising the vowels is a sign that the pupils actually understand the letters and are not just parroting the vowels.

Type of School	ENGLISH (%)			CHICHEWA (%)		
	N	Mean	SD	N	Mean	SD
Village Based	107	35.87	22.3	107	56.88	37.73
SCF-Assisted	83	23.27	20.49	83	46.82	33.67
Government	78	21.20	19.35	78	36.66	33.1

The fact that the pupils performed better on the mathematics test than in the language tests is surprising considering that national examination results from the end of the primary cycle show that the performance of most pupils in mathematics is very poor compared to their performance in languages. A possible explanation could be that the mathematics that is being taught in the first two years is reinforced by the pupils' daily experiences outside school. In contrast most of the pupils are not exposed to reading and writing experiences in their homes and have thus to rely solely on the school to provide these skills. The educational levels of their parents were low which means that the majority of the pupils come from backgrounds where literacy skills are absent.

Given the every day experience that pupils have in dealing with numerical problems the present Standard 1 and 2 curriculum might not be challenging enough for them.

Further, during classroom observation we noted that the teachers found it easier to organise individual learning activities during mathematics lessons whilst for the languages most of the teachers in AS and GS schools resorted to chorus teaching.

7.4 Gender Differences

As Table 20 shows, boys also outperformed girls in both English and Chichewa in all the three school types. The differences were not always significant. The results were significant for English scores for the village based schools and Chichewa for the AS schools. The gender gap in achievement for English was greatest in VBS schools and smallest in government schools.

Type of School	ENGLISH (%)				MATHEMATICS (%)		CHICHEWA (%)	
	BOYS		GIRLS		BOYS	GIRLS	BOYS	GIRLS
	N	Mean	N	Mean	Mean	Mean	Mean	Mean
VBS	58	40.35 (21.6)	49	30.88 (22.2)	72.24 (24.1)	67.14 (25.4)	63.19 (36.0)	49.52 (38.7)
AS	46	27.44 (21.7)	37	19.16 (18.1)	70.07 (23.4)	64.03 (22.5)	53.96 (34.6)	38.10 (30.8)
GS	43	22.64 (21.3)	36	19.63 (16.9)	70.98 (26.5)	65.10 (24.7)	38.50 (34.5)	34.53 (31.7)

Figures in parentheses are standard deviations.

The results obtained here suggest that gender differences in performance appear right from the outset in the early school years. In contrast, studies done in Western countries indicate that in the early school years girls surpass boys in most school tasks (Maccoby and Jacklin 1974). Although earlier studies showed that in middle school years boys excelled in mathematics and science subjects whilst girls excelled in verbal and linguistic tasks, more recent studies indicate that the gender gap has been closed and in fact girls now surpass boys in most academic subject areas. The results obtained in this study indicate that girls are disadvantaged even in areas that in other countries have been dominated by girls. These results also support the earlier suggestion that the mathematics curriculum may not be challenging enough and there might be reinforcement from their daily life as the mathematics scores show the smallest differences between the sexes.

Using means to compare test scores across school types has limitations. First, the mean is not a good measure of central tendency if the distributions are very far from normal. As Figure 1 indicates, these distributions are indeed quite far from normal. Instead of being evenly distributed around a central score, English scores are loaded at the low end, maths at the high end and Chichewa scores have one concentration at the low and another at the high. Second, it may be more meaningful to ask whether the percent of students who have achieved mastery at this point in their schooling differs among these groups of schools. For this purpose, a measure based on frequency achieving a given score rather than on the scores themselves is a better measure.

Table 21 compares test scores across school types using the percent of students achieving two different threshold scores. These indicators all lead to the same conclusion as tables 18, 19 and 20 that look at the means: In no case do the VBS schools do worse than the other two groups; in nearly all cases they do better.

7.5 Shifts

A unique feature of all the VBS schools was the operation of a double shift system. The first two VBS schools were observed during the afternoon shift and the second two in the morning. The table includes results for both Standard 1 and 2 pupils.

The shift system was necessitated by a lack of teaching space and the need to have small and manageable class sizes. Each shift had its own set of teachers. It was therefore imperative for the evaluation to assess the impact of such arrangements on achievement. Of particular interest was whether pupils attending afternoon classes were learning just as much as those attending school in the morning. The main argument against shift systems is that pupils and teachers attending afternoon classes often come to school already tired and in addition it is also usually too hot during this time of day to learn or teach effectively. This, it is argued, impacts negatively on achievement.

Subject and School Type	N	% with Scores (out of 100)	
		50 and above	70 and above
Mathematics			
Village Based Schools	107	75	60
SCF Assisted Schools	83	72	53
Government Schools	79	71	58
English			
Village Based Schools	107	10	0
SCF Assisted Schools	83	6	0
Government Schools	79	4	0
Chichewa			
Village Based Schools	107	55	49
SCF Assisted Schools	83	42	31
Government Schools	79	34	23

Time of Shift	Maths		English		Chichewa	
	N	Mean	N	Mean	N	Mean
Morning	59	69.10	59	37.48	59	61.35
Afternoon	48	70.89	48	34.21	48	51.53

As Table 22 indicates pupils from the afternoon shift on average surpassed those from the morning shift in mathematics. In languages pupils from the morning shift had higher mean scores. These differences in performance between the two groups of pupils were, however, not statistically significant. Thus we conclude that the time of attendance did not negatively impact on achievement.

SCORES	6 - 9			10 - 12			13 plus		
	VBS	AS	GS	VBS	AS	GS	VBS	AS	GS
English	18.5	4.2	7.9	24.6	13.1	11.9	25.7	17	11
Mathematics	21.5	16.5	19.4	28.8	25	25.5	29.9	28.1	28
Chichewa	29.5	15.4	17.6	26.1	29.1	27.1	41.1	40.5	24
Total Score	69.5	36	44.9	96.9	67.5	64.5	99.3	85.5	63
N	29	13	30	69	57	42	11	28	23
%of test takers in age bracket	27	10	26	64	60	59	9	30	30

7.6 Age

The pupils in these schools ranged widely in age, from 6 to 17 and an important consideration is whether the age composition of the pupils in the various types of schools biased the achievement results. All being equal, the older the child, the better he or she would be expected to do on these tests of very basic arithmetic and language concepts. The average scores by age grouping and by school type are shown in table 23.

Although there is an undoubted age effect, with older children doing better no matter what type of school they are enrolled in, the VBS children still have higher mean scores in all subjects. They also show that the age distribution cannot explain the better performance of the VBS schools. They have double the proportion of children in the 6 - 9 age group that the AS schools and half as many in the 13+ grouping than either the AS or the GS schools.

7.7 Summary and Conclusions

The key conclusions to be drawn from the achievement test results are the following:

- Village-based schools perform significantly better than both SCF-assisted and government schools in both Chichewa and English
- SCF-assisted schools also perform better than government schools even though the difference is not always significant
- Boys perform better than girls in all subjects, but the differences are not significant in mathematics
- There is no significant difference between the schools in mathematics achievement

- There is no significant difference in performance between the VBS children who attend the morning shift and those in the afternoon shift
- The age distribution of the pupils does not explain the performance differences between school types.

8 EXPLAINING THE DIFFERENCES IN ACHIEVEMENT TEST RESULTS

The results in the previous section indicated that there was a significant amount of variation in student performance on the achievement tests, across school types and also variation within school types. This variation leads to the obvious conclusion, that **there are individual school characteristics that have an impact on performance which are probably just as important as the characteristics of school types**. In addition, the uneven distribution of scores across the population indicates that we should more carefully examine the scores and our explanations for them.

Therefore, we utilize several different measures of central tendency and different analytical procedures as seem appropriate to clarify our understanding of what is happening in these schools.

8.1 The Achievement Test

Figure 1 suggests that the maths test did not include difficult enough questions to distinguish between the better students, that the English test did not include enough easy questions to distinguish between the poorer students, and that the Chichewa test should have included both harder and easier questions. However, **if the tests provide a fair representation of what children in standard 2 are supposed to know, which we believe it does, then there may be something wrong with the curriculum or the way it is being taught in all schools**.

The curriculum assumes that children have had very little exposure to the basic concepts in any of the three subjects. This is probably an appropriate assumption to make for seven year olds, the age when children are supposed to enter standard 2. However, the average entering age is closer to ten, by which time children are likely to have considerable exposure in everyday life to numbers and basic arithmetic operations. This could account for the generally high maths scores (and for the fact that there is no significant difference between maths scores across school types). For English, students at any age have very little daily exposure. The bimodal distribution for Chichewa is probably explained by there being two groups of villages, one in which Chichewa is the language of everyday life and one in which it is not. In the first group, scores could be expected to be high for the same reason they are in maths; in the second group, scores could be expected to be low for the same reason they are in English.

We tested the notion that children pick up many of the basics typically taught in the first few standards in the course of everyday life, particularly by age 11, by administering the same tests to Standard 1 children in the last seven schools we visited. The mean scores by standard and age are reported below in table 24. The means were not tested for significance because of the small sample sizes for the Standard 1 children, but the differences are large enough to support a view that attending school does improve performance on these tests. The differences in mathematics at the higher ages are small -- indirect support of our suggestion that the mathematics curriculum at this level may not be challenging enough.

Age	English		Chichewa		Mathematics		Sample Size	
	Mean I	Mean II	Mean I	Mean II	Mean I	Mean II	I	II
6	0 (0)	6.00 (0)	3.00 (0)	20.00 (0)	4.00 (0)	15.00 (0)	1	1
7	3.43 (4.08)	2.44 (2.60)	7.43 (7.41)	5.00 (5.92)	9.43 (5.06)	13.00 (7.76)	7	9
8	0.6 (0.89)	13.38 (14.86)	5.60 (8.17)	20.23 (23.12)	6.80 (3.77)	21.69 (11.18)	5	13
9	3 (3.0)	19.16 (17.85)	15.20 (9.83)	35.69 (26.69)	15.0 (5.52)	26.50 (9.53)	5	32
10	4.5 (3.54)	17.00 (18.18)	15.50 (9.19)	30.69 (25.61)	12.50 (2.12)	24.78 (9.77)	2	54
11	8.33 (8.02)	14.90 (13.56)	13.33 (13.50)	36.58 (25.07)	23.67 (11.02)	26.23 (9.58)	3	31
12	4.75 (6.95)	20.41 (16.86)	13.50 (15.02)	39.91 (25.93)	19.50 (7.59)	29.20 (7.58)	4	74
13	3.14 (2.19)	18.23 (16.76)	17.00 (14.56)	37.73 (21.98)	26.57 (7.50)	28.64 (8.61)	7	22

Standard Deviations in parentheses.

The mean scores for the seven year olds in English and Chichewa are anomalous but the relatively large standard deviations in these categories, as in many of the others, make the figures difficult to interpret.

8.2 Background and Household Factors

The household survey included a variety of questions that permit us to say something about whether and how other factors are influencing achievement. The factors include information on household income, education of parents, religion, number of siblings in school, student age and gender.

Household income. While the household survey did not ask about household income directly, a variety of questions were included as proxies. These questions provided information on occupation, extent of land cultivated and owned, type of crop planted, whether the household is a net purchaser or seller of these crops, ownership of livestock and tools, and characteristics of the dwelling unit. Answers to a few other questions -- for example, why the child was absent from school -- sometimes provided clues as well. This information was combined in a variety of ways in an effort to develop an index to represent household income or level of living. In the end, three approaches were utilized: one index was developed using weights derived from a principal components analysis; a second index was developed on the basis of judgment about the

relative importance of various factors given observations made in the villages; and some of the more interesting of these factors were utilized without weighting them together as variables in regression equations containing dummy variables for the school groupings (see table 25).

	1	2	3	4	5	6	7	8
Dep Var	M(sc)	E(sc)	C(sc)	E(50)	C(70)	E(sc)	E(sc)	C(sc)
Obs	269	269	269	269	269	215	269	
R2 (%)	0.2	9.3 *	5.4 *	8.6 *	5.7 *	21 *		11 *
Constant	26.6 *	17.1*	36.7 *	-2.9 *	-1.2 *		68.0 *	13.1 *
VBS(0,1)	0.7	11.8 *	20.2 *	1.1	1.4 *	14.3 *	11.4 *	
AS(0,1)	-0.3	2.0	10.2 *	0.4	0.4		-3.6	1.5
School 1					-4.4		5.9 *	
School 2					@		19.5 *	
School 3					-11.2 *			1.2
School 4					9.3		40.2*	
School 5					@		-11.2	
School 6					13.7 *			26.7 *
School 7					6.8			6.4
School 8					5.2			2.2
School 9					-0.9			-8.7
Land Holding						0.5		
Gender							5.8 *	9.8 *

Notes:

M(sc)= maths score; E(sc)=English score; C(sc)=Chichewa score. Maximum score= 100.
M(70)=maths score >=70; E(50)=English score >=50; C(70)=Chichewa score>=70.
OLS used for equations using scores; logit used for equations using scores >= cutoff.
VBS, AS, and all School variables are '0,1' indicator variables.
Land Holding (a proxy for income) is measured in hectares.
Gender is a '0,1' variable, 0=girl, 1=boy.
@indicates that variable was dropped by regression program.
* indicates the coefficient is significantly different from zero at p<=0.10

None of the indices generated means for school groups that were significantly different from each other¹⁵. In other words, no matter how we measured income, there was no meaningful

¹⁵ Indeed, if anything, incomes in the VBS villages were lower than elsewhere. While not significant, the means of most of the indexes were lower there; and general observation of these villages supports this conclusion. Few of the VBS villages had any shops; none had any community facilities like a health centre or post office (other than the school); and school children were very poorly dressed -- most in rags and without shoes. In contrast the AS villages were usually located in trading centres where there were a variety of shops and common facilities, the GS villages were generally larger and within a few meters of a tarmac road, and children in their schools were much better dressed. It is not surprising that the VBS villages were the poorest of the lot; SCF deliberately selected poor, remote villages without other schools in which to locate their village schools.

difference in the average income of parents from the three school types. The inclusion of one or another of these indices in regressions added very little to explained variance. The variable, 'land cultivated', used by itself, produced means of 2.63, 2.48 and 1.62 hectares for the three school groupings, but it had insignificant effects on test scores when used in regression equations (e.g., equation 7 of table 25).

There are three possible explanations for these findings. First, of course, our indices may not be measuring income accurately; we have no independent way to verify them. Second, the expected association between our measures of income and test scores may not be present in this data set because there is so little variation in income: nearly everyone is close to the subsistence level; very few appear to be much above it. Third, the relationship between income and school achievement may be present only at higher levels of schooling. Income may affect attendance and duration of stay in school and hence ultimate school achievement, but as these effects are cumulative, they may not show up in standard 2. If the second or third of these explanations, or some combination of the two, is correct, we can conclude that income cannot explain the results obtained.

Parent education. The better performance of VBS schools is not the result of parents of children in these schools having more education than those in the other groups (see table 4). These parents have less education than the average; and regression equations indicate that years of education of head and of spouse have virtually no effect on test scores. As with income, the explanation may be that the effect of parents' education on children's achievement is cumulative and only shows up clearly in later years.

Religion. There is no significant association between religious affiliations and school groupings. There is, however, a strong association at the individual school level. At first glance, the school level association does not appear to be related to test scores: Muslims predominate in some of the better and some of the poorer schools, for example. Regressions suggest that there is a correlation, **with being Muslim tending to raise and CCAP (Church of Central Africa, Presbyterian) tending to lower test scores**. The reason for this association is not clear and could be explored in later evaluations. A possibility is that Muslim children may be receiving supplementary literacy and numeracy training in Koranic schools that is bolstering achievement at this level. However, the addition of explained variance is not large and the relationship between test scores and school groupings is not appreciably affected by including religion in the regressions.

Student age. There is no appreciable difference in mean student age of different school groupings, but there are significant difference amongst schools and these do appear to be associated with test scores. Students in school 4 are 2 years older than the average and those in schools 2 and 6 are one year older. These three schools have the highest average scores on all the tests. Students in school 3, a mediocre school, are two years younger. Also, schools 2 and 4 have a smaller range of ages (9 - 14) whereas school 3 has a larger range (6 - 14) and school 9, another mediocre performer, has the largest range of all (6 - 17). Regressions confirm that an increase in age raises test scores, and the inclusion of this variable raises explained variance from 9 to 13 percent.

This is a quite plausible finding. Older students, particularly in the first few grades of school, are likely to do better because their environment has exposed them to much of what is

being taught. This should be especially true for simple arithmetic and local language comprehension, but in these remote areas not for English.

Gender. There is no significant difference in the level of female enrolment between the various school groups. The grand mean is 55 percent male and 45 percent female; the means for AS and GS schools are the same and those for VBS schools are 54 and 46 percent. There are significant differences amongst schools in gender ratios, but they are virtually uncorrelated with test scores. However, gender has a significant effect on test scores as discussed in section 7.4. Overall, girls scored between 5 (for maths) and 11 (for Chichewa) points lower than boys. This same effect can be observed when holding school type and school effects constant (see equations 7 and 8 of table 25).

However, the percent of variance in test scores explained by school types is small. Using OLS regression with test scores as the dependent variable and indicator (0,1) variables for school types yields R^2 s of virtually zero for mathematics, 9 percent for English and 5 percent for Chichewa. Using logit regression with the dependent variable indicating whether a student has achieved specified thresholds yields pseudo- R^2 s of approximately the same magnitudes.

In summary, none of the variables discussed above, independently or together, explain the association found between test scores and school types. A few of them add significantly to explained variance (if we can trust the significance tests results given the skewed nature of the test score distributions), but even then, they do not appreciably alter the relationship between test scores and school types.

It appears that the individual school has an effect on achievement is separate from the effect of school type. In other words, it matters not only what type of school a child attends, but also which particular school within that type. The impact is consistent across tests: if a school did well on one test it is quite likely to have done well on the other two tests. Thus, for example, on all three tests, the best schools are 2, 4 and 6 (2 and 4 are VBS schools; 6 is a AS school). There is less consistency across exams on the poor end of the scale, but school 5 (an AS school) obtained the lowest scores on all three exams while school 3 (a VBS school), 9 and 10 (both GS schools) did poorly on at least two of the exams.

SCHOOL	MATHS	ENGLISH	CHICHEWA	TOTAL SCORE
VBS 4	31.39	33.33	56.39	120.88
AS 2	29.58	20.86	47.79	98.55
VBS 2	29.45	25.86	42.55	96.68
VBS 1	26.00	18.26	32.53	76.54
AS 3	26.14	13.75	32.96	72.46
GS 1	26.25	14.82	28.93	70.00
GS 3	26.4	10.65	28.24	65.28
VBS 3	20.96	15.11	28.42	64.57
GS 2	27.16	10.32	21.72	59.28
AS 1	22.07	8.31	18.81	49.58

Regression analysis confirms this finding. It also suggests that the school effect explains a larger percent of the variance in test scores than does the treatment effect. Adding dummy variables for individual schools to the basic equation with school type raises R^2 for mathematics from 0.2 to 11 percent, that for English from 9 to 21 percent and that for Chichewa from 5 to 21 percent. Logit analysis provides similar results.

8.3 Instructional Activity

In order to try to explain more concretely what makes some schools spectacularly more effective than others in teaching basic language skills (in English and Chichewa) in particular, we analysed the data slightly differently by contrasting the data on instructional activity from the three most successful schools and with those from the seven others. It was considered that this perspective would be most likely to highlight the differences in classroom behaviour and teacher attitudes that lead to better performance, and help sharpen our view of the reasons why the VBS schools were on average more effective than the others.

The three top schools include two VBS schools and one AS school. The others include all the government schools, two AS and two VBS schools. As we can see from the table above, the three best schools were clearly much better than the others, and the best school was in turn clearly better than the other two in the same category. Attention is focused on Chichewa and English classes only as the greatest differences in performance were identified in these subject areas.

It is clear from table 27 that there are only a few activities for which there are meaningful differences in incidence between the two types of classrooms. The high performing classrooms are more likely to use group work, and more likely to have a student discussion, more likely to use group response (when children respond in unison to a teacher's question), but less likely to

recite from memory as a group (group recitation). These four characteristics together suggest a higher level of pupil participation and engagement in the high performing classrooms than in the others. They indicate that the teachers in these schools have more active classes and practise instructional techniques more likely to promote learning in young children.

The teachers in the low performing classrooms were more likely to spend class time checking student work.

8.4 Transfers and Repetition

A possible explanation for the difference in test scores is the extent to which the Standard 2 classrooms contain either transfers and repeaters. Unfortunately, no direct evidence was collected on this topic. The indirect evidence consists of the repetition statistics collected which suggests that repetition may be lower in VBS schools. The age profile of the tested students (tables 16 & 23) also does not suggest that students in the VBS school are any older than students in the other types of schools.

8.5 Summary

In this section we looked at three possible explanations of the differences in achievement between the three school types. First, there is a significant difference between the scores of Standard 1 and 2 pupils in all subjects. So, the test performance is a result of what has happened during the 10 years they have spent in school. Second, apart from gender, background characteristics explain only a small amount of the variation in achievement scores and the communities from which the various schools draw their students do not appear to be significantly different from each other.

Third, some differences in emphasis in instructional activity were identified between the VBS schools and the others, and also between classrooms in high performing schools and those in low performing schools. However, the differences were small and subtle, and this finding strongly suggests that the teachers in the various types of schools are teaching in essentially the same way. **The differences in emphasis may have more to do with differing class sizes, access to supplementary materials and levels of motivation.** After all, the training the VBS teachers receive is based on the official teacher training curriculum and is carried out by officials from the Ministry of Education.

ACTIVITY	Percentage of Classes Where Activity Occurred	
	High Performing	Low Performing
Lecture	40	50
Teacher Writing on Board	60	71
Group Work	10	8
Discussion	20	4
Student Doing Exercises	50	42
Students Copying from Board	10	8
Teacher/Student Demonstrating	40	50
Group Recitation	40	63
Teacher Checking Student Work	40	58
Group Response	90	71
Teacher Helping Boy	40	38
Teacher Helping Girl	30	38
N	10	24

* = Chichewa and English classes only

9 PROGRAMME COSTS

9.1 Introduction

Although we were asked to evaluate the relative costs of the two programmes, we would like to urge the reader that all our conclusions are highly tentative. We obtained cost estimates from the SCF field office and also from the DEO in Mangochi and Chief Accountant's office in the Ministry of Education headquarters, but we do not feel that any is a complete estimate. The government figures do not reflect the large investments that have been made in developing an educational system in Malawi - teacher training, textbook development, central administration, and so on. For SCF, we cannot include the costs of their international network of field offices and the collective experience and expertise that that represents. It is also not clear that any legitimate cost comparison can be drawn when the two school administrations are so different.

9.2 Recurrent costs

We assume that the basic administrative framework already exists and that what is needed is to hire teachers and buy textbooks and other supplies. We know that this approach will be criticised, but we do not believe there is any reasonable alternative given the lack of comparable data from the two sources (SCF and the government).

The district education office in Mangochi spent MK121 per child last year. This includes teacher and materials costs but not buildings. This also does not include the salaries of the administrative and other staff associated with the DEO's office (including the PEAs). Nor does it include the costs, transport, administration, allowances, etc. associated with running that office. However, this level of spending was considered too low. The DEO suggested that he needs to spend MK500 per child per year to have an acceptable system and meet all the guidelines, e.g. one textbook to two children, one teacher for 60 students and so on.

The SCF figures are taken from the grant amendment agreement dated September 1995. These costs reflect projected expenditure on 8 schools (four old and four new) for materials and teacher salaries. The given exchange rate is MK14.37 to \$1 in the grant agreement. The SCF figure attempts to get a per pupil costing for all eight of the VBS schools, which enrolled 1695 children in December, 1995.

The SCF estimate does not include the cost of textbooks, as no sum was budgeted for that item as the assumption was that the Ministry would supply all textbooks. Nevertheless, if we compare what the DEO suggested was an acceptable level of expenditure on teacher salaries and materials, i.e. MK500 per

ITEM	COST
Teacher salaries 37 teachers @ MK348 per month	\$ 10,752.40
Chalkboard/ chalk*	\$ 2,250.00
Trunks/desks/water pails/cups/mats*	\$ 2,200.00
Teacher supplies**	\$ 717.39
Students Supplies**	\$ 2,153.75
Total SCF Year 2 budget for materials and teacher salaries for 1695 pupils & 37 teachers	\$ 18073.54
Per pupil cost in Malawi kwacha	MK153.23

* - Estimates for Year 1 and Year 2 added together

** - Estimate for Year 1, pro-rated for Year 2 .

child per year with the actual cost to SCF of the same items, i.e. MK153.23 (see table 28). The SCF cost falls well within what could be considered acceptable by the Ministry.

9.3 Total Costs

The total budget for year 1 for the SCF programme was \$110,150.00, when the schools were serving 787 children in four schools and there was a rise of 13 percent to \$124,854.00 for year 2 when the schools had doubled in number and the enrolment was 1695. The total per pupil cost in year 1 was \$139.96 (MK2,011.08) and it fell to almost half, \$73.66 or MK1,058.49 in year 2.

In addition to teacher salaries and materials, the SCF also budgeted funds for teacher training, both pre-service and in-service, the purchase and maintenance of a four-wheel drive vehicle and several motorbikes, personnel (programme manager, supervisor, driver, watchman. etc), travel within Malawi, and a proportion of the cost of maintaining the Mangochi and Lilongwe offices.

According to the Chief Accountant's office in the Ministry of Education, the total cost per pupil in Mangochi this year was budgeted at MK126.45. With these figures, the per pupil costs at SCF schools are more than 8 times higher than those in the government schools.

We need, however, to look again at the basis of our comparison considering some of the findings of this evaluation. First, it has been a running thread throughout the earlier discussion that the quality of education being provided in government schools, despite the superior qualifications of their personnel is not as high as that available in the VBS schools. Second, 92 percent of the government expenditure on primary education in Mangochi (and 97 percent nationally) goes to teacher salaries. There is very little left for learning materials, supervision, training and other forms of instructional support. Third, the scale of the two systems, less than 2,000 in one and over 112,000 in the other, makes any direct comparison dubious. Fourth, this

comparison does not factor in the cost implications of the higher wastage rates in the government school, both dropout and repetition. Fifth, the per pupil cost for Mangochi does not reflect the support (emoluments, administration, etc.) from the Ministry of Education Headquarters or for that matter from the Ministry of Finance. Sixth, the costs for the Ministry to either absorb or start-up VBS schools would be only a fraction of what it has cost the SCF, largely because the marginal costs of adding schools is relatively low. Even SCF experienced a significant drop in per pupil costs in the second year of operation, when they went from four to eight schools.

9.4 **Summary**

Due to lack of data, we were not able to present a complete picture. However, we have no clear cut evidence that the VBS schools are significantly more expensive to establish or run than government schools, if all costs are taken into account and if the systems were of the same magnitude. We would like to stress that the issue should not be absolute costs but cost effectiveness -- what is being delivered for the money spent.

10 OPTIONS FOR EXPANSION AND REPLICATION

10.1 Teacher Salaries

Unless teacher salaries in the village based schools are taken over by the government, there is little chance that these village schools will continue to operate. The communities indicated that there was little prospect of their being able to provide the minimum of approximately MK1300 per month to support teachers (assuming schools have a minimum complement of four PSLC holders).

They were almost unanimous in stating that unless they were successful in obtaining replacement support from the government or another NGO, the school would have to close. In one community, the villagers had already formed a committee to look into the issue of replacement support, but the committee had not yet met. In another, the parents indicated that they would attempt to get loans and start a business to keep the school going until such time as the government can be persuaded to take on the burden of the salaries. The response from the household interviews was more optimistic as 80 percent of the VBS parents indicated that they would be willing to continue to support the schools were the SCF to withdraw its support.

10.2 Supervision

Effective supervision is presently being provided for the VBS schools by SCF, with some assistance from the MOE PEAs. **However, the government schools are not being effectively supervised and, in our opinion, this is a key cause for the poor results in the government schools.** In fact we are fairly certain that without the supervision, the results in the VBS schools might have been even lower than those in the government schools. The VBS teachers were less educated, had not received formal teacher training, and yet were able to produce better results. **The key lesson in this is that all teachers need regular supervision and guidance, regardless of their training and education level.**

Any plan to expand or develop schooling must therefore include a realistic, viable plan for regular supervision of the schools. The SCF supervisor had both a home and an office in the middle of the zone in which he worked. He also had transportation, a motorbike, as well as fairly regular access to other SCF vehicles. He was, therefore, a regular presence in the schools.

The Ministry needs to exert pressure on its PEAs to move into their zones; they are doing little good in their present locations.

It appears to us that **with training and supervision, the VBS schools are providing an educational service that is equal in most respects and superior in others to the service being provided in nearby full primary schools.**

10.3 Community Self-Help

The community members we talked to showed no reduction in their willingness to engage in self-help to build schools for their children. The only problem arose when their efforts are not reciprocated with matching funds or efforts. So, for example, one government school had had piles of bricks for additional classroom blocks for several years because the agency that had promised to help them build the classrooms never followed through with its promise.

All communities had been successfully mobilized to build their schools and community members indicated their readiness to contribute in this way again. However, their lack of confidence in their own competence, particularly in the government schools where teachers are usually not from the same community, has inhibited their involvement in other areas.

We feel that teachers and headteachers should be encouraged to reach out more to parents through the holding of regular open days. An additional way of supporting community-school communication and interaction is through the holding of literacy classes based in the school.

10.4 Adapted Curriculum

After two years of use in the VBS schools, the reduced curriculum has shown that it can have a positive impact on the learning achievement of pupils in Standard 1 and 2. This impact is strongest in English and Chichewa. We suggest that the increased time spent on the core subjects (25 percent more) makes a significant contribution to the higher learning achievement in the VBS schools.

10.5 Local Recruitment of PSLC Teachers

The results of this evaluation indicate clearly that locally recruited PSLC teachers can effectively teach the core subjects in Standards 1 and 2, provided they have regular supervision.

Current government policy stipulates the JC as a minimum qualification. While we would endorse the desire to have teachers be as qualified as possible, we would like to suggest that many communities, particularly those communities, that lack educational services most, would be unable to attract and retain JC or MSCE teachers. Despite their high unemployment levels, only 30 percent of the 19,000 teachers hired in 1994 were MSCE holders -- they do not want to be primary school teachers, particularly when being a primary school teacher involves living in an isolated rural community among 'strangers'.

We would like to suggest the use of individuals with the PSLC qualification to teach junior grades for the following reasons:

- They have demonstrated their effectiveness in this project
- They have shown themselves to be hard working and highly motivated
- When locally recruited, they will help to ease the bottleneck of teacher housing that prevents some schools from being properly staffed

- They have a lower cost per teacher with respect to salary
- Local recruitment is recognized as a reliable strategy for increasing the number and proportion of female primary teachers

There are a variety of mechanisms that could be used, the creation of a separate category of teachers; the issuance of temporary teachers' licences to be confirmed if the holder obtains a JC or MSCE within five years of starting to teach, etc. As their use in higher grades has not been assessed, this should be considered a temporary strategy to address an emergency situation caused by the massive influx into schools by the announcement of free education.

A variety of models could also be considered, e.g. locally recruited PSLC teachers could be used within full primary schools to reduce class sizes in the junior grades. A similar strategy utilizing untrained school leavers has been used in Kenya by the district that produces the best results for rural areas.

CONCLUSIONS AND RECOMMENDATIONS

We consider that the VBS model has proved successful in developing schools in rural areas that can effectively instruct children in Standard 1 and 2. At the same time, the evidence that we were able to gather on repetition and dropout suggests that they are more effective in retaining their students. We believe the key factors to be (in order of importance):

- modified curriculum - that leads to more time being spent on the core subjects of English, mathematics, Chichewa and general studies
- regular supervision - that maintains standards (in record keeping, instruction, etc.) and motivates teachers
- smaller class sizes - that promote learning and allow more flexibility in instructional strategies
- instructional strategies - that allow more participation by children and thus promote learning

Specifically, in responding to the scope of work we can make the following conclusions:

1. That children in VBS schools perform as well as or better than pupils in SCF-assisted government schools and ordinary government schools in mathematics, English and Chichewa.
2. That, overall, teachers in VBS schools are as competent as teachers in the other types in instructing Standard 1 and 2 classes.
3. That within the limits of what we were able to observe, and keeping in mind that VBS schools were much smaller with fewer teachers, the record keeping and administration appeared to be better in VBS schools.
4. The relationship between the district education office and the SCF appeared to be excellent. The relationship between the school committees and the SCF appeared to be good also. Relationships with parents appeared to be distant but not negative.
5. That the level of parental satisfaction with the village based schools was higher than with the other types of schools but their level of involvement differed little from that of parents of the government schools.
6. Within the limits of the data available to us, recurrent costs (teacher salaries and materials) in VBS schools were comparable to actual recurrent costs in government schools but per pupil total costs were higher.
7. Within the limits of the data available to us, dropout and repetition appeared to be better than in government schools. It was not possible to assess intake rates without community censuses.
8. Household and background characteristics contributed very little to student achievement.

Further, the VBS schools enrolled an equal proportion of girls and boys and had a higher percentage of female teachers than either the SCF-assisted schools or the government schools. However, while girls performed better in the VBS schools on an absolute scale, their performance relative to boys was poorer than in both types of government schools.

From our observations, we make two sets of recommendations below, one for the Ministry of Education and the other for the SCF.

11.1 Recommendations for Ministry of Education

We believe that the revolutionary concept of free education requires a major re-thinking of educational models and strategies within the country. It is not viable to simply consider expanding the system that has served the country for the past 30 years. **The educational system that advocates 'free education' should be different not only in degree but in kind**, from a system that passively restricted access to primary school and actively restricted it at the secondary level. For example, the old system advocated the gradual raising of educational standards of teachers, and promoted the idea of certain entitlements, like housing for teachers, that simply cannot be supported within a context of universal (or near universal) primary schooling.

At the same time some good strategies like the establishment of district level PEAs have atrophied and the PEAs are therefore not playing the role they could. **PEAs could play the same role as field assistants do in the Ministry of Agriculture or CDAs do in the Ministry of Community Services, i.e. be in regular and meaningful contact with schools, motivating and supporting teachers.** This evaluation has demonstrated that an invaluable contribution can be made to the quality and effectiveness of teaching when there is regular monitoring of and feedback to teachers.

The current pupil:teacher ratio in the country is 1:62 (MOE 1995). Even allowing for the relatively small class sizes at the end of primary school, there are enough teachers in Malawi to make Standard 1 classes of 100 and over unnecessary. A key problem is poor allocation of teachers to schools particularly in rural areas. A recent study (Kadzamira & Kunje 1995) documented the oversupply of teachers to urban areas.

If Mangochi district is typical, then housing is a constraint for the true decentralization of the PEAs as well as allocation of teachers to schools. The lack of transport also restricts the movement of PEAs. We would like the government to consider addressing these constraints urgently and flexibly. For example, there are a small enough number of PEAs that those with isolated rural zones for whom suitable houses cannot be found could have them built. They could have bicycles instead of or as well as motor bikes. Bicycles have the virtue of being both cheaper to obtain and easier to maintain in rural areas.

The issue of textbook and materials distribution also requires a creative and innovative approach that is currently lacking. Certain supplies, like soft drinks, beer and examination papers are regularly delivered to the most remote areas of the country. We feel that district education officers should take advantage of the existing networks, either to learn how it is done

or to supplement their own systems.

The supervision of schools, class sizes and the efficient distribution of teachers and textbooks are essential building blocks in the provision of quality education -- a commodity that ministers of education in the region have recently declared a basic human right (EFA Mid-Decade Review regional conference in Johannesburg).

We, therefore, make the following strong recommendations to the government of Malawi:

- A. THE GOVERNMENT SHOULD ENSURE THAT PEAS HAVE THE NECESSARY TRANSPORT AND SUPPORT TO CARRY OUT THEIR TRAINING AND SUPERVISION TASKS IN ALL SCHOOLS
- B. THE GOVERNMENT SHOULD PERMIT, IN SITUATIONS WHEN JC AND MSCE HOLDERS ARE NOT AVAILABLE, PSLC HOLDERS TO TEACH IN THE FIRST TWO YEARS OF PRIMARY SCHOOL
- C. THE GOVERNMENT SHOULD SERIOUSLY CONSIDER EXPANDING THE NUMBER OF VILLAGE SCHOOLS, PROVIDED THAT THERE IS TRAINING AND SUPERVISION SUPPORT
- D. THE GOVERNMENT SHOULD APPROACH COMMERCIAL DISTRIBUTORS, CHIBUKU, SOUTHERN BOTTLERS, MANEB, ETC TO ASSIST IN THE DISTRIBUTION OF TEXTBOOKS AND OTHER MATERIALS.
- E. THE GOVERNMENT SHOULD MORE STRENUOUSLY PRACTICE LOCAL RECRUITMENT IN CASES WHERE HOUSING IS A PROBLEM
- F. CLASS SIZES IN LOWER PRIMARY STANDARDS SHOULD BE LOWERED AND URGENT HELP IN CLASS MANAGEMENT AND MULTI-GRADE TEACHING STRATEGIES BE GIVEN TO TEACHERS OF THESE CLASSES

11.2 Recommendations for SCF

These recommendations are based partly on the premise that for viability and sustainability, the message of the differences in the VBS model of school development should be spread throughout the community. While SCF have made a good start, we believe they have underestimated the amount of time and effort required to build true community involvement -- a key requirement for the sustainability of community schools.

- A. SCF SHOULD RECRUIT A COMMUNITY WORKER TO HELP MOBILIZE COMMUNITY PARTICIPATION IN THE SCHOOLS
- B. SCF SHOULD SPONSOR ANOTHER EVALUATION WITHIN TWO YEARS TO ASSESS:

- (i) WHETHER THE PSLC TEACHERS REMAIN EFFECTIVE IN STANDARDS 3 AND 4,
 - (ii) WHETHER VBS PUPILS CAN TRANSFER SMOOTHLY INTO FULL PRIMARY SCHOOLS AND
 - (iii) THE GENDER DYNAMICS WITHIN THE VBS CLASSROOMS
- C. THAT LOCAL BUILDERS BE COMPENSATED FOR THEIR FULL TIME EFFORT DURING THE CONSTRUCTION OF CLASSROOM BLOCKS
- D. THAT SCF PROMOTE STUDY VISITS OF TEACHERS IN NEIGHBOURING GOVERNMENT SCHOOLS TO SCF VILLAGE SCHOOLS TO OBSERVE THE INSTRUCTIONAL ENVIRONMENT

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Appendix 1: **GOVERNMENT PROCEDURES**

Pupils: There are absolutely no restrictions on enrolment into Standard 1 under the new free education system.

Teachers: Teachers are hired by the Ministry of Education and deployed through district education offices without reference to either the community of existing staff. The minimum qualification for a primary school teacher is the Junior Certificate. All those without teacher training are hired as temporary teachers.

Conditions of Employment:
Educational upgrading is not a requirement when one is hired as a government teacher.

Curriculum: In government schools, instruction is for 30 half hour periods per week covering eight subjects: English, Chichewa, Mathematics, general studies, music, religious instruction, physical education and creative arts. The first four take up 24 periods a week.